How-to Successfully Digitize your Water Supply System

The promise of Digitalization and Smart Water Analytics to leverage your real-time data to improve performance and boost ROI is here. The technology and economics allow quick start-up and short payback periods, while supporting integration of legacy systems. The challenge is in system integration. The road to success is littered with failures, so having the right process, support, and systems are critical.

Welcome back to UAM's ongoing series on digitization/smart technology for water systems. We've embarked on this effort to help water system owners, managers, and operators navigate the state of digital water, understand the technology, its features, costs, and benefits, along with how to plan for and successfully transform their system.

This article, the second in the series, follows the initial article, *"Intelligent Analytics Is Fundamentally Changing How We Visualize, Interconnect, and Manage Our Water EcoSystem."*   The inaugural article focused on a core component of a digitized/smart system, the intelligence platform and associated features and benefits, you can find it here [LINK]. The intent of this series is to provide "bite-size" concise articles addressing key digital / smart water system topics.

Below is our approach to "**How-to Go Digital**". It combines years of experience in engineering, consulting, change and quality management, economics, along with hands-on digital/smart system design, installation, and implementation. For those looking for a more detailed discussion, see our "*Roadmap to a Digital/Smart Water Supply System*" e-book, which will be available soon on our website (https://uamllc.com). In the interim, here's a quick overview:

   Step 1: Define the Vision & Objectives – Carpenters live by the mantra "measure twice, cut once." This step along with the next is the analog to their mantra and involves identifying the desired future state, understanding/quantifying the benefits of digitization, and defining the goals that digitization is intended to achieve. Key elements to consider in this effort include: stakeholder engagement; needs assessment; development of a vision statement; specific, measurable, achievable, relevant, and time-bound (SMART) objectives; key performance

indicators (KPIs); establishing guiding principles to inform the design and implementation of the project, and establishing risks and mitigation strategies.

Step 2: Assess the Current State - To get to where you want to go, you must know where you are. A fundamental requirement is the assessment of the current state of the organization, process, and system. This involves identifying the current gaps, strengths, weaknesses, opportunities, and threats, and understanding the current processes and systems that are in place. A great approach is to employ process improvement techniques to map processes, define systems, and evaluate gaps, etc.

Step 3: Develop a Digitization Plan - Based on the vision, objectives, and assessment of the current state, a Digitization Plan is developed. The plan outlines the specific steps/tasks that need to be taken to achieve the desired future state. This includes timelines, resources required, roles and responsibilities, and a communication plan. The plan provides for the selection of the appropriate technology and involves evaluation of different types of digital/smart technologies, such as sensors, automation systems, and data analytics platforms. The selection should be based on the needs of the system, the available budget, and ability to achieve the desired outcomes.

Step 4: Pilot Testing - Before implementing the system/technology on a large scale, it is important to conduct a pilot test. This involves installing the technology in a representative zone of the water supply system to test its functionality and effectiveness. The pilot test can help to identify any issues or challenges that need to be addressed before scaling up.

Step 5: Implementation and Integration - Once the technology has been selected and tested, it is time to integrate throughout the water supply system. This involves installing the hardware and software components of the technology and integrating it with the existing infrastructure. This step generally requires the assistance of technology provider(s) and/or a specialized contractor.

Step 6: Monitoring and Maintenance - After the technology has been integrated, it is important to monitor and maintain it regularly. This includes monitoring the data generated by the technology and using it to optimize the system's performance. It also involves conducting regular maintenance to ensure that the technology is functioning properly and to address any issues that arise.

In summary, successfully ***Going Digital*** involves a structured and systematic process for planning and implementing organizational and system changes. The above-defined approach focuses on minimizing disruption and maximizing the benefits of digitization/smart technology by defining the vision and objectives, assessing the current state, developing a digital transformation plan, pilot testing, and implementing, evaluating, and sustaining the fruits of digitization / smart technology. Contact us for further discussion or visit our website (http://uamllc.com):